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COMPANY NAME: NW Natural

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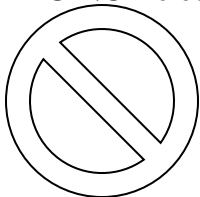
Report is required by: []OAR
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If yes, enter docket number: RG 41

List applicable Key Words for this report to facilitate electronic search:
Meter Sampling Program Report for 2016, NW Natural

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SCOTT LUNDGREN, P.E.
Engineering
Tel: 503.226.4211 x 4355
email: srl@nwnatural.com



February 20, 2017

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
201 High Street SE, Suite 100
Post Office Box 1088
Salem, Oregon 97308-1088

Re: RG 41: Meter Sampling Program Report for 2016

At the request of Commission Staff, Northwest Natural Gas Company, dba NW Natural, submits herewith its 2016 Meter Sampling Program Report.

As required by our Meter Testing Standards and Procedures document, the accuracies of all operating families of diaphragm meters with capacities 1000 ft³/hr and below have been statistically analyzed for the year 2016. This analysis utilized all relevant meter tests conducted during the five calendar years between January 1, 2011 and December 31, 2016. The results of this analysis are as follows:

- As of December 31, 2016, we had 735,209 installed meters. These meters formed 462 meter families.
- Over the course of 2016, the company tested 4,543 meters. Over the five-year period of 2011 through 2016, the company had a total of 30,267 meter samples from which to base its results.
- 446 meter families either have sufficient meter samples to establish statistical confidence in their accuracy, or are so new that they do not yet require minimum sampling. These meter families amount to 723,517 meters, or 98.4 percent of the total meter population. The performances of these families are exhibited in Appendix A.
- 12 meter families and 2 sub-families from 1 family, consisting of a total of 4,678 meters, are not conforming and have been put on the list to be removed by the end of 2017, per the Meter Sampling Program (MSP) guidelines. The performances of these families are exhibited in Appendix B.
- 457 out of the 462 meter families had sufficient meter tests available to have their accuracy determined statistically; the remaining 5 families will be removed from service due to their small population size. The performances of these families are exhibited in Appendix B.
- Compared to the results above, the Year 2015 report resulted in 4,082 meters being put on the list for removal by the end of 2016.

If you have any questions or comments, please contact me at (503) 226-4211 ext. 4355.

Sincerely,

/s/ Scott Lundgren

Scott Lundgren, P.E.
Gas Measurement and Technical Support Engineer

cc: Andy Fortier Lori Russell
Jon Huddleston Adam Turco
Grant Yoshihara Mark Thompson
Steve Nelson



Appendix A
Meter Families in Conformance

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
120	0	1967	Rockwell	175	48	98	21		
120	0	1968	Rockwell	175	47	99	34	1	
120	0	1970	Rockwell	175	45	658	83	5	2
120	0	1973	Rockwell	175	42	690	53	1	
120	0	1974	Rockwell	175	41	2708	155	12	4
120	0	1975	Rockwell	175	40	1873	104	8	2
120	0	1976	Rockwell	175	39	1161	68		3
120	0	1977	Rockwell	175	38	1405	86	4	1
120	0	1978	Rockwell	175	37	1530	106	4	4
120	0	1979	Rockwell	175	36	1696	83	3	8
120	0	1980	Rockwell	175	35	1077	99	7	2
120	0	1981	Rockwell	175	34	751	95	6	2
120	0	1983	Rockwell	175	32	1428	76	3	
120	0	1984	Rockwell	175	31	1533	66	1	1
120	0	1985	Rockwell	175	30	2017	86	3	2
120	0	1986	Rockwell	175	29	1360	62		1
120	0	1987	Rockwell	175	28	2315	110	3	3
120	0	1988	Rockwell	175	27	2256	96	1	1
120	0	1989	Rockwell	175	26	3613	134	2	3
120	0	1990	Rockwell	175	25	3683	158	3	5
120	0	1991	Rockwell	175	24	3984	185		6
120	0	1992	Rockwell	175	23	6933	275	2	5
120	0	1993	Rockwell	175	22	2748	116	1	4
120	0	1994	Rockwell	175	21	1426	73		3
120	0	1995	Rockwell	175	20	361	66	3	
120	0	1996	Rockwell	175	19	814	94	4	3
120	0	1997	Rockwell	175	18	201	26		
120	0	1998	Rockwell	175	17	77	22		
120	0	2006	Rockwell	175	9	1			
120	0	2008	Rockwell	175	7	3			
120	0	2009	Rockwell	175	6	13	2		
120	0	2010	Rockwell	175	5	2			
120	0	2012	Rockwell	175	3	1	4		
120	0	2014	Rockwell	175	1	1	2		
125	0	1979	Rockwell	200	36	187	49	2	
125	0	1980	Rockwell	200	35	1909	64	2	
125	0	1981	Rockwell	200	34	2562	63	2	3
125	0	1982	Rockwell	200	33	3188	115	1	2
125	0	1983	Rockwell	200	32	1835	61		
125	0	1984	Rockwell	200	31	2183	79	1	1
125	0	1985	Rockwell	200	30	1567	97	15	
125	0	1986	Rockwell	200	29	416	124	2	1
125	0	1987	Rockwell	200	28	572	77	4	2
125	0	1988	Rockwell	200	27	440	60	2	1

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
125	0	1989	Rockwell	200	26	535	81	2	
125	0	1990	Rockwell	200	25	368	22		1
125	0	1991	Rockwell	200	24	736	26		1
125	0	1993	Rockwell	200	22	561	27		1
125	0	1994	Rockwell	200	21	476	25		
125	0	1995	Rockwell	200	20	121	27		
125	0	1996	Rockwell	200	19	260	50	1	
125	0	1998	Rockwell	200	17	89	28		
125	0	1999	Rockwell	200	16	159	26		
125	0	2008	Rockwell	200	7	5			
125	0	2009	Rockwell	200	6	3			
130	0	1971	American	175	44	1111	93	6	2
130	0	1972	American	175	43	2758	89	12	1
130	0	1973	American	175	42	808	49	1	
130	0	1974	American	175	41	5008	142	19	
130	0	1975	American	175	40	38	16		
130	0	1976	American	175	39	1440	89	9	4
130	0	1977	American	175	38	3374	133	10	2
130	0	1978	American	175	37	1618	95	6	
130	0	1979	American	175	36	6542	235	15	5
130	0	1980	American	175	35	6369	234	21	
130	0	1981	American	175	34	4714	157	22	4
130	0	1982	American	175	33	3741	169	24	2
130	0	1983	American	175	32	3125	124	14	2
130	0	1984	American	175	31	4951	163	12	7
130	0	1986	American	175	29	4109	137	9	4
130	0	1987	American	175	28	6073	217	21	2
130	0	1988	American	175	27	3251	112	12	3
130	0	1989	American	175	26	3350	161	5	2
130	0	1990	American	175	25	3197	139	14	3
130	0	1991	American	175	24	5025	148	7	2
130	0	1993	American	175	22	3268	132	9	1
130	0	1994	American	175	21	2708	112	7	1
130	0	1995	American	175	20	564	73	3	2
130	0	1996	American	175	19	1085	32		1
130	0	2006	American	175	9	4			
130	0	2007	American	175	8	2			
130	0	2008	American	175	7	3			
130	0	2009	American	175	6	20			
130	0	2013	American	175	2	1	1		
130	0	2014	American	175	1	2	2		
140	0	1968	Sprague	175	47	1065	79		12
140	0	1970	Sprague	175	45	374	64		7
140	0	1972	Sprague	175	43	175	54	2	1
140	0	1973	Sprague	175	42	2980	140	5	10
140	0	1974	Sprague	175	41	644	38		

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
140	0	1975	Sprague	175	40	748	98		5
140	0	1976	Sprague	175	39	1130	72	1	3
140	0	1977	Sprague	175	38	334	26		1
140	0	1978	Sprague	175	37	278	90		8
140	0	1979	Sprague	175	36	166	37		3
140	0	1980	Sprague	175	35	352	48		5
140	0	1981	Sprague	175	34	657	38		
140	0	1982	Sprague	175	33	616	53	1	4
140	0	1983	Sprague	175	32	857	99	3	7
140	0	1984	Sprague	175	31	729	86		5
140	0	1985	Sprague	175	30	1200	61		8
140	0	1986	Sprague	175	29	989	62	1	5
140	0	1987	Sprague	175	28	3058	139		9
140	0	1988	Sprague	175	27	805	45		5
140	0	1989	Sprague	175	26	787	45		1
140	0	1990	Sprague	175	25	1054	99		9
140	0	1991	Sprague	175	24	473	55		2
140	0	1993	Sprague	175	22	678	40		3
140	0	1994	Sprague	175	21	615	35		2
140	0	1997	Sprague	175	18	483	51	1	3
140	0	2007	Sprague	175	8	1			
140	0	2008	Sprague	175	7	2			
140	0	2009	Sprague	175	6	2	1		
140	0	2011	Sprague	175	4	1			
270	0	1998	Schlumberger	1000	17	33	15		
270	0	2000	Schlumberger	1000	15	31	15		1
270	0	2002	Schlumberger	1000	13	8	12		
272	0	2004	Actaris	1000	11	17	35	2	
300	540	1996	Rockwell	800	19	41	16		1
300	540	1997	Rockwell	800	18	20	17		3
300	540	2002	Rockwell	800	13	7	8		
300	540	2005	Rockwell	800	10	12	12		
450	0	1993	Schlumberger	400	22	213	33		
450	0	1996	Schlumberger	400	19	295	41		1
450	0	1998	Schlumberger	400	17	478	50		
450	0	2003	Schlumberger	400	12	30	19		
450	0	2004	Schlumberger	400	11	9	11		
450	0	2005	Schlumberger	400	10	8	7		
450	0	2006	Schlumberger	400	9	1			
450	0	2013	Schlumberger	400	2	1	1		
452	0	2004	Actaris	400	11	480	42		2
452	0	2005	Actaris	400	10	17	14		
452	0	2006	Actaris	400	9	4			
452	0	2008	Actaris	400	7	1			
470	472	1973	American	425	42	11	13		
470	472	1982	American	425	33	29	14		

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
470	472	1983	American	425	32	33	26	1	1
470	472	1984	American	425	31	127	21		
470	472	1985	American	425	30	50	18		
470	472	1987	American	425	28	175	40		
470	472	1988	American	425	27	78	21		
470	472	1989	American	425	26	40	19		
470	472	1990	American	425	25	41	35	1	1
470	472	1991	American	425	24	39	35	2	
470	472	1992	American	425	23	160	38	1	1
470	472	1993	American	425	22	102	25		
470	472	1995	American	425	20	100	24		
470	472	1996	American	425	19	23	14		
470	472	1999	American	425	16	272	58	2	
470	472	2000	American	425	15	432	77	3	
470	472	2001	American	425	14	94	20		
470	472	2002	American	425	13	465	44		
470	472	2003	American	425	12	219	70	4	
470	472	2004	American	425	11	92	23		
470	472	2005	American	425	10	25	16		
470	472	2006	American	425	9	69	8	1	
470	472	2007	American	425	8	251	19		3
470	472	2008	American	425	7	23			
470	472	2009	American	425	6	5			
470	472	2010	American	425	5	2			
470	472	2012	American	425	3	1			
471	0	2005	American	425	10	1012	82	13	
471	0	2006	American	425	9	749	50	7	
471	0	2007	American	425	8	558	37	1	1
471	0	2008	American	425	7	77	2		
471	0	2009	American	425	6	4			
471	0	2010	American	425	5	107	4		
471	0	2011	American	425	4	114	10	1	
471	0	2012	American	425	3	10			
475	0	2006	American	630	9	650	33	4	
475	0	2007	American	630	8	665	24	2	
475	0	2008	American	630	7	1116	52	9	
475	0	2009	American	630	6	953	39	7	
475	0	2010	American	630	5	696	27		1
475	0	2011	American	630	4	1094	36		
475	0	2012	American	630	3	1505	44		
475	0	2013	American	630	2	1578	45		
475	0	2014	American	630	1	1615	38	1	
475	0	2015	American	630	0	1302	21		
475	0	2016	American	630	-1	39			
480	486	1989	American	800	26	36	30	2	3
480	486	1990	American	800	25	33	22		

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
480	486	1991	American	800	24	75	47	3	
480	486	1992	American	800	23	34	30	2	2
480	486	1995	American	800	20	31	19		2
480	486	1996	American	800	19	11	10	1	
480	486	2000	American	800	15	56	36	2	3
480	486	2001	American	800	14	25	21	1	1
480	486	2002	American	800	13	33	16		
480	486	2006	American	800	9	3			
480	486	2007	American	800	8	1			
485	0	1978	American	800	37	9	10		
485	0	1980	American	800	35	32	15		
485	0	1981	American	800	34	40	26	1	1
485	0	1982	American	800	33	65	46	5	
485	0	1984	American	800	31	84	67	2	5
485	0	1987	American	800	28	31	34	1	2
485	0	1995	American	800	20	17	19	1	
485	0	1996	American	800	19	10	12		
485	0	1997	American	800	18	9	10		
485	0	2011	American	800	4	1			
490	0	2007	Sprague	305	8	1			
500	502	1992	American	1000	23	7	6		
500	502	1993	American	1000	22	11	11		1
500	502	1998	American	1000	17	97	44	7	
500	502	2000	American	1000	15	48	19		
500	502	2001	American	1000	14	20	13		
500	502	2002	American	1000	13	61	20		
500	502	2003	American	1000	12	27	23		
505	507	1980	American	1000	35	13	11		
505	507	1982	American	1000	33	10	10	1	1
505	507	2006	American	1000	9	610	84	10	
505	507	2007	American	1000	8	434	50	2	
505	507	2008	American	1000	7	384	30	4	
505	507	2009	American	1000	6	320	16	1	
505	507	2010	American	1000	5	213	10	3	
505	507	2011	American	1000	4	401	49	1	
505	507	2012	American	1000	3	429	36	2	
505	507	2013	American	1000	2	410	21		
505	507	2014	American	1000	1	468	17		
505	507	2015	American	1000	0	383	7		
505	507	2016	American	1000	-1	3			
510	515	1973	Rockwell	310	42	98	58	3	6
510	515	1974	Rockwell	310	41	56	33	1	3
510	515	1976	Rockwell	310	39	304	49	1	2
510	515	1977	Rockwell	310	38	170	42		3
510	515	1978	Rockwell	310	37	147	39	1	1
510	515	1979	Rockwell	310	36	183	60	3	3

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
510	515	1982	Rockwell	310	33	95	40	1	3
510	515	1983	Rockwell	310	32	149	59	4	6
510	515	1984	Rockwell	310	31	33	21		1
510	515	1986	Rockwell	310	29	26	27	1	1
510	515	1988	Rockwell	310	27	146	54	1	2
510	515	1990	Rockwell	310	25	276	65	6	7
510	515	1991	Rockwell	310	24	230	25		1
510	515	1994	Rockwell	310	21	46	39		4
510	515	1995	Rockwell	310	20	61	30	1	2
510	515	1996	Rockwell	310	19	41	39	2	2
510	515	1997	Rockwell	310	18	10	11		
510	515	2008	Rockwell	310	7	1			
510	515	2009	Rockwell	310	6	1			
510	515	2010	Rockwell	310	5	1			
510	515	2011	Rockwell	310	4	1	2		
510	515	2013	Rockwell	310	2	1	2		
510	515	2014	Rockwell	310	1	1			
520	0	1979	Rockwell	415	36	98	21		1
520	0	1980	Rockwell	415	35	89	45	2	
520	0	1981	Rockwell	415	34	240	42		4
520	0	1983	Rockwell	415	32	22	20		1
520	0	1984	Rockwell	415	31	18	22	1	
520	0	1991	Rockwell	415	24	88	45	2	
520	0	1992	Rockwell	415	23	82	20		
520	0	1993	Rockwell	415	22	42	15		1
520	0	1994	Rockwell	415	21	102	21		1
520	0	1996	Rockwell	415	19	149	51	2	
520	0	1997	Rockwell	415	18	62	56	4	
520	0	2000	Rockwell	415	15	138	36	1	
520	0	2003	Rockwell	415	12	165	79	2	
520	0	2004	Rockwell	415	11	110	25		
520	0	2005	Rockwell	415	10	55	20		
520	0	2006	Rockwell	415	9	1	2		
520	0	2007	Rockwell	415	8	1	1		
520	0	2009	Rockwell	415	6	3			
520	0	2011	Rockwell	415	4	1	1		
555	0	1980	American	310	35	97	21		
555	0	1982	American	310	33	144	22		1
555	0	1983	American	310	32	123	21		
555	0	1984	American	310	31	227	23		
555	0	1985	American	310	30	133	33		
555	0	1986	American	310	29	89	39	1	
555	0	1987	American	310	28	72	34	1	
555	0	1988	American	310	27	9	16		
555	0	1989	American	310	26	16	30	2	
555	0	1990	American	310	25	28	15		

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
555	0	1991	American	310	24	26	24	2	
555	0	1994	American	310	21	12	16	1	
555	0	2008	American	310	7	1			
555	0	2009	American	310	6	1			
555	0	2012	American	310	3	1	1		
560	0	1985	American	250	30	1497	45	1	1
560	0	1986	American	250	29	6391	176	6	
560	0	1987	American	250	28	451	62	2	
560	0	1988	American	250	27	3223	84		2
560	0	1989	American	250	26	7185	210	1	5
560	0	1990	American	250	25	6484	190	1	6
560	0	1991	American	250	24	5747	161	3	4
560	0	1992	American	250	23	4894	114		3
560	0	1993	American	250	22	4162	101	2	2
560	0	1994	American	250	21	6262	127	1	
560	0	1995	American	250	20	8339	191	7	1
560	0	1996	American	250	19	11308	235	7	2
560	0	1997	American	250	18	15322	306	24	
560	0	1998	American	250	17	14663	278	10	1
560	0	1999	American	250	16	11371	187	2	1
560	0	2000	American	250	15	11411	205	4	
560	0	2001	American	250	14	9558	142	2	
560	0	2002	American	250	13	8590	121	1	
560	0	2003	American	250	12	2335	89	11	1
560	0	2005	American	250	10	78	32	1	1
560	0	2006	American	250	9	670	19		
560	0	2007	American	250	8	214	9		
560	0	2008	American	250	7	6			
560	0	2010	American	250	5	2			
560	0	2011	American	250	4	2	4		
560	0	2012	American	250	3	6	5		
560	0	2013	American	250	2	4	3		
560	0	2014	American	250	1	5	5		
560	0	2015	American	250	0	1	7		
561	0	2005	American	250	10	2279	100	11	
561	0	2006	American	250	9	21811	352	4	
561	0	2007	American	250	8	22343	403	21	
561	0	2008	American	250	7	23387	412	21	
561	0	2009	American	250	6	14505	230	13	
561	0	2010	American	250	5	10308	169		
561	0	2011	American	250	4	10828	184		
561	0	2012	American	250	3	12122	200		1
561	0	2013	American	250	2	15544	187	3	
561	0	2014	American	250	1	14881	98	1	
561	0	2015	American	250	0	17990	52	2	
561	0	2016	American	250	-1	240			

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
570	0	1988	Rockwell	275	27	546	26		1
570	0	1990	Rockwell	275	25	5484	112	6	
570	0	1991	Rockwell	275	24	2966	72	1	
570	0	1992	Rockwell	275	23	188	24		
570	0	1993	Rockwell	275	22	94	25		1
570	0	1994	Rockwell	275	21	5145	99		2
570	0	1995	Rockwell	275	20	6583	109		1
570	0	1996	Rockwell	275	19	7782	139	1	2
570	0	1997	Rockwell	275	18	2397	41		1
570	0	1998	Rockwell	275	17	5526	92	1	2
570	0	1999	Rockwell	275	16	10672	194	9	2
570	0	2000	Rockwell	275	15	8593	123	8	2
570	0	2001	Rockwell	275	14	8804	118	1	1
570	0	2002	Rockwell	275	13	10964	155		2
570	0	2003	Rockwell	275	12	20063	260	2	
570	0	2004	Rockwell	275	11	3648	54		2
570	0	2005	Rockwell	275	10	13	10		
570	0	2006	Rockwell	275	9	8			
570	0	2007	Rockwell	275	8	7			
570	0	2008	Rockwell	275	7	6	1		
570	0	2009	Rockwell	275	6	17			
570	0	2010	Rockwell	275	5	1			
570	0	2011	Rockwell	275	4	1	2		
570	0	2012	Rockwell	275	3	4	3		
570	0	2013	Rockwell	275	2	1	3		
570	0	2014	Rockwell	275	1	2	3		
570	0	2015	Rockwell	275	0	2	1		
572	0	2004	Invensys	275	11	14086	218	3	
572	0	2005	Invensys	275	10	25018	368	16	2
572	0	2006	Invensys	275	9	8256	139	8	1
572	0	2007	Invensys	275	8	24			
572	0	2008	Invensys	275	7	78	1		
572	0	2009	Invensys	275	6	793	28		
572	0	2010	Invensys	275	5	17	1		
572	0	2011	Invensys	275	4	90	4		
572	0	2012	Invensys	275	3	4	1		
572	0	2013	Invensys	275	2	1	1		
572	0	2014	Invensys	275	1	1	1		
572	0	2015	Invensys	275	0	4	1		
580	0	2007	Sprague	175	8	1			
585	0	1991	Sprague	250	24	755	33		
585	0	1992	Sprague	250	23	2151	78		
585	0	1993	Sprague	250	22	3915	123		
585	0	1994	Sprague	250	21	1688	58	1	
585	0	1995	Sprague	250	20	1545	54		
585	0	1996	Sprague	250	19	4513	95		2

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
585	0	1997	Sprague	250	18	6017	142		3
585	0	1998	Sprague	250	17	5505	124		
585	0	2000	Sprague	250	15	65	22		
585	0	2001	Sprague	250	14	66	30		
585	0	2002	Sprague	250	13	59	78	2	
585	0	2003	Sprague	250	12	14	19		
585	0	2004	Sprague	250	11	64	29		
585	0	2006	Sprague	250	9	2			
585	0	2009	Sprague	250	6	5			
585	0	2014	Sprague	250	1	2			
590	0	1988	Lancaster	250	27	90	23		
590	0	1989	Lancaster	250	26	1366	59		1
590	0	1990	Lancaster	250	25	1365	63	1	
590	0	1991	Lancaster	250	24	1773	93	1	3
590	0	1992	Lancaster	250	23	2729	90		
590	0	1993	Lancaster	250	22	2891	85	1	
590	0	1994	Lancaster	250	21	4533	164	4	5
590	0	1995	Lancaster	250	20	4990	140	4	9
590	0	1996	Lancaster	250	19	47	23		
590	0	1997	Lancaster	250	18	2166	48		
590	0	1998	Lancaster	250	17	29	14		
590	0	2006	Lancaster	250	9	2			
590	0	2008	Lancaster	250	7	1			
590	0	2009	Lancaster	250	6	2	1		
590	0	2010	Lancaster	250	5	2			
590	0	2011	Lancaster	250	4	1	1		
595	600	2000	Schlumberger	250	15	3497	464	19	6
595	600	2001	Schlumberger	250	14	3920	399	3	4
595	600	2002	Schlumberger	250	13	3406	318	1	13
595	600	2004	Schlumberger	250	11	35	16		
595	600	2008	Schlumberger	250	7	1			
595	600	2012	Schlumberger	250	3	1	3		
130	0	1985	American	175	30	2150	89	10	1
120	0	1982	Rockwell	175	33	1258	54	2	1
520	0	1978	Rockwell	415	37	45	17		
520	0	1999	Rockwell	415	16	354	70	11	
125	0	1978	Rockwell	200	37	1639	82	4	
140	0	1971	Sprague	175	44	1014	58	1	7
485	0	1983	American	800	32	65	45	4	
520	0	1988	Rockwell	415	27	57	18		
120	0	1969	Rockwell	175	46	236	64	6	
125	0	1992	Rockwell	200	23	650	25		
450	0	1999	Schlumberger	400	16	107	20		
470	472	1986	American	425	29	72	30	1	
470	472	1998	American	425	17	196	65	5	
480	486	1993	American	800	22	59	36	2	1

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Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	# OK	# Fast	# Slow
510	515	1987	Rockwell	310	28	252	39		4
120	0	1972	Rockwell	175	43	895	72	3	1
270	0	2001	Schlumberger	1000	14	63	18		
450	0	1997	Schlumberger	400	18	68	20		
510	515	1981	Rockwell	310	34	212	61	6	3
130	0	1997	American	175	18	253	23		
500	502	1999	American	1000	16	20	18	2	
510	515	1993	Rockwell	310	22	113	54	5	1
505	507	1981	American	1000	34	16	11		1
520	0	1995	Rockwell	415	20	319	73	6	2
140	0	1992	Sprague	175	23	576	39	1	2
555	0	1995	American	310	20	132	33		
130	0	1992	American	175	23	1447	94	7	1
140	0	1998	Sprague	175	17	8	10		
452	0	2003	Actaris	400	12	102	32	1	2
470	472	1994	American	425	21	242	64	3	
470	472	1997	American	425	18	352	39	1	
520	0	1982	Rockwell	415	33	48	32	2	2
520	0	1987	Rockwell	415	28	45	29	1	2
585	0	1988	Sprague	250	27	193	23		
585	0	1999	Sprague	250	16	251	24		
590	0	1999	Lancaster	250	16	155	24		
510	515	1992	Rockwell	310	23	158	66	4	2
555	0	1997	American	310	18	37	15		1
595	600	2003	Schlumberger	250	12	66	17		1
510	515	1989	Rockwell	310	26	109	32	1	2
520	0	1976	Rockwell	415	39	76	18		1
555	0	1981	American	310	34	44	16		
510	515	1975	Rockwell	310	40	44	35	3	2
570	0	1989	Rockwell	275	26	784	23		1
120	0	1971	Rockwell	175	44	528	80	11	
520	0	1977	Rockwell	415	38	48	17		1
520	0	2002	Rockwell	415	13	96	21		
510	515	1980	Rockwell	310	35	125	51	7	2
Total						723517	25188	908	482



**Appendix B
Meter Families Not Conforming (To Be Removed)**

Perf	Alt. Perf	Year Set	Manufacturer	Size	Age	# Meters in Family	Subfamily
140	0	1969	Sprague	175	46	1	
500	502	1990	American	1000	25	6	
500	502	2005	American	1000	10	6	
520	0	2001	Rockwell	415	14	405	
561	0	1990	American	250	25	1	
125	0	1985	Rockwell	200	30	1567	496184-496202
471	0	2005	American	425	10	1012	921428-921445
475	0	2009	American	630	6	953	993702-993757, 993877-993898
125	0	1997	Rockwell	200	18	113	
300	540	1999	Rockwell	800	16	13	
480	486	1998	American	800	17	7	
561	0	2005	American	250	25	588	876651-882613
520	0	1986	Rockwell	415	29	6	
Total						4678	